Configuration A: AN1FH-C

Configuration B: AN1FI-C

ANALYZER, SPECTRUM

1. **GENERAL.** This procurement requires a low-frequency, digital storage spectrum analyzer.

2. **CLASSIFICATION.** Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications. For Configuration B, the Style E convertible/rackmountable requirements are invoked.

3. **MEASUREMENT CAPABILITIES.** The equipment shall be capable of signal analysis within the minimum limits, ranges, and accuracies specified below.

3.1 **Frequency characteristics**.

3.1.1 **Frequency range.** 5 Hz to 50 kHz with an unbalanced input, 300 Hz to 4 kHz with a balanced input.

3.1.2 **Frequency display accuracy**. ±3.5 Hz.

3.1.3 **Frequency display resolution.** 1 Hz or less.

3.1.4 **Stability**. ±10 Hz/hour.

3.1.5 **Bandwidth**. Selectable bandwidths from 1 Hz to 300 Hz.

3.1.5.1 **Bandwidth accuracy**. ±15%.

3.1.5.2 **Shape factor**. 10:1 maximum for all bandwidths.

3.2 **Amplitude characteristics**. The minimum amplitude characteristics shall be as specified in table I.

3.2.1 Dynamic range. 80 dB minimum.

3.2.2 Noise sidebands. 7 dB/Hz minimum when a 1 Hz bandwidth is selected.

3.2.3 Spurious responses. 80 dB below the input reference level.

3.2.4 Power line-related spurious responses. 80 dB below the input reference and no greater than 0.1 uV.

3.2.5 Overload indicator. An input overload indication shall be provided.

3.2.6 Internal calibrator. An internal calibration signal shall be provided to verify the full scale amplitude and frequency indication.

TABLE I. Amplitude Range and Accuracy

Amplitude Parameters	**Log Mode**	**Linear Mode**
Range	30 to -150 dBm	20V to 100 nV
Frequency response	±0.5 dB	±5%V
Display accuracy	±2 dB	±2%
Input attenuator accuracy	±0.3 dB	±3%
Reference level accuracy		
Most sensitive range	±1 dB	±10%
All other ranges	±1 dB	±3%

3.3 **Sweep characteristics**.

3.3.1 Linear frequency span. Selectable from 50 Hz/div to 50 kHz/div.

3.3.2 Linear sweep time. Selectable from 0.1 s/div to 2000 s/div.

3.3.3 Sweep linearity. ±1%.

3.3.4 Log sweep. Frequency span: 20 Hz to 43 kHz. Sweep time: 5s.

3.3.5 Sweep modes.

a. Repetitive: Continuously sweeps the specified band.

b. Single: Sweep occurs one time.

c. Reset: Sets to the start frequency of the sweep.

d. Manual: Sweep position is controlled by the operator.

e. Zero scan: Displays the time varying signal at the center or start frequency within the selected bandwidth.

3.3.6 Sweep error indicator. An indication of a sweep speed that is too fast to capture the full response shall be provided.

3.4 **Input characteristics**.

3.4.1 Impedance. 1 megohm or greater shunted by 40 pF or less for unbalanced circuits, 600 ohms ±10% for balanced circuits.

3.4.2 Maximum input. ±100 Vdc, 50 Vrms.

3.5 **Output characteristics**.

3.5.1 Tracking generator. A tracking generator output shall be provided.

3.5.2 X-Y recorder. An X-Y recorder output and pen lift control shall be provided.

3.6 **Digital storage**. The equipment shall be provided with digital storage capable of concurrently displaying stored spectrum and input spectrum.

4. GENERAL REQUIREMENTS.

4.1 **Power source**. MIL-T-28800 nominal power source requirements are invoked. Maximum power consumption: 40W.

4.2 **Weight**. 20 kg (44 lb) maximum.

4.3 **Lithium batteries**. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.